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President William McKinley Signed the Congressional Bill on March 3, 1901 Establishing the National Bureau of Standards

55th Congress of the United States of America,
 At the Second Session,
 and held at the City of Washington on Monday, the third day of December, one thousand nine hundred.

A N ACT

To establish the National Bureau of Standards,

by the Senate and House of Representatives of the United States assembled, That the Office of Standard Weights

and Measures be known as the National Bureau of Standards, and that the functions of the bureau shall consist in the custody of the standards used in scientific investigations, commerce, and educational institutions, with the Government.



New and Renewal SRM's

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SRM®



UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899

July 2001

Dear SRM Customer:

Since 1998, NIST has issued 188 new and renewal NIST Standard Reference Materials (SRMs). This special catalog supplements the existing printed NIST SRM catalog to help you find exactly the material you need.

This catalog is divided into six sections, grouping SRMs into major categories of use. We encourage you to check all categories, as your use may not fit exactly into these categories. The supplemental information contains a description of each material and the date the material was issued. The latter is to ensure that the material in your possession is the most current.

In addition, I want to announce that online ordering of NIST Standard Reference Materials is now available for U.S. customers only. The NIST SRM Website <http://www.nist.gov/srm> now provides easy access to the information and services that customers need most. A single mouse click reaches the current price list, all new and newly renewed NIST SRMs, and the complete list of all NIST SRMs in order by SRM/Catalog number. Orders can be placed online with virtually no extra effort. Visit the site TODAY! <http://www.nist.gov/srm>

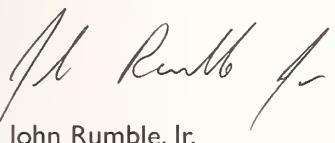
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We look forward to helping you meet all your Standard Reference Materials needs.


John Rumble, Jr.
Acting Chief
Standard Reference Materials Program

Industrial Standard Reference Materials

New/Renewal Industrial Standard Reference Materials (SRMs) for Ferrous Metals, Nonferrous Metals, Microanalysis, High Purity Materials, Ceramics and Glasses, Cement, and Engine Wear Measurements.

There are eighteen new and nine renewal industrial materials available. In the area of ferrous and nonferrous metals there are eight new zinc aluminum alloys, nitrogen in low alloy steel, nickel based superalloy, and two new refractory alloys. There are five renewals of high purity materials with a range from sucrose, potassium hydrogen phthalate, acetanilide, cystine and chlorine isotopic, and three new reference materials, isotopically characterized carbon dioxide. There is a new silicon nitride powder, three renewal cements, one renewal of wear metals in oil, and a new lubricating oil additive package.

SRM#	Description	Date	New/ Renewal
861	Nickel-Based Superalloy (Chips)	04/05/2001	New
1736	Zinc-Aluminum Alloy (Al - 0.3076 % ^a)	11/05/1998	New
1737	Zinc-Aluminum Alloy (Al - 0.6302 % ^a)	11/05/1998	New
1738	Zinc-Aluminum Alloy (Al - 0.1014 % ^a)	11/05/1998	New
1739	Zinc-Aluminum Alloy (Al - 0.2049 % ^a)	11/05/1998	New
2139	Zinc-Aluminum Alloy (Al - 0.2042 % ^a) Chips	11/05/1998	New
1740	Zinc-Aluminum Alloy (Al - 0.4177 % ^a)	11/05/1998	New
1741	Zinc-Aluminum Alloy (Al - 0.5242 % ^a)	11/05/1998	New
1742	Zinc-Aluminum Alloy (Al - 0.7917 % ^a)	11/05/1998	New
1755	Nitrogen in Low Alloy Steel	11/01/2000	New
1775	Refractory Alloy (Disk)	11/01/2000	New
2175	Refractory Alloy (Chips)	11/01/2000	New
2066	K-411 Glass Microspheres	09/05/2000	New
17e	Sucrose (Polarimetric)	11/10/1998	Renewal
84k	Potassium Hydrogen Phthalate (Acidimetric Primary Standard)	01/12/2000	Renewal
141d	Acetanilide (99 - 92 % ^a C,H,N,O)	04/23/1998	Renewal
143d	Cystine (C,H,N,S,O)	08/13/1998	Renewal
975a	Chlorine (Isotopic)	01/31/2001	Renewal
8562	CO ₂ Heavy, Paleomarine Origin	09/22/1998	New
8563	CO ₂ -Light, Petrochemical Origin	09/22/1998	New
8564	CO ₂ -Biogenic, Modern Biomass Origin	09/22/1998	New
8983	Silicon Nitride Powder (Tot. N,O,C)	04/04/2000	New

^a The values reported as a mass fraction

SRM#	Description	Date	New/Renewal
1880a	Portland Cement	08/09/1999	Renewal
1882a	Calcium Aluminate Cement (CaO - 39.29)	12/14/1999	Renewal
1883a	Calcium Aluminate Cement (CaO - 29.52)	12/14/1999	Renewal
1085b	Wear Metals in Oil (300 mg/kg)	09/12/2000	Renewal
1848	Lubricating Oil Additive Package	10/05/2000	New

Environmental Standard Reference Materials

New/Renewal Environmental Standard Reference Materials (SRMs) for Inorganic, Organic, Primary Gases, Fossil Fuels, Geological and Ore Measurements.

There are twenty-one new and thirty-five renewal materials available for environmental measurements. New materials listed below cover a large range, such as; LC column performance, and chiral selectivity, reformulated gasoline, petroleum and furnace coke, sludge and sediments, diesel particulate matter and extract, mussel tissue contaminants, trace elements in coal subbituminous, and trace elements in soil. The thirty-five renewal materials include primary gas mixtures, sulfur, mercury, and trace elements in coal, PCB's in human serum, organics in cod liver oil, transformer oil, and urban dust.

SRM#	Description	Date	New/ Renewal
1630a	Trace Mercury in Coal	02/12/1999	Renewal
1641d	Mercury in Water	01/10/2000	Renewal
1649a	Urban Dust	11/20/1998	Renewal
1658a	Methane in Air, 1 $\mu\text{mol/mol}$	03/23/2000	Renewal
1666b	Propane in Air, 10 $\mu\text{mol/mol}$	02/12/2001	Renewal
1667b	Propane in Air, 50 $\mu\text{mol/mol}$	02/12/2001	Renewal
1668b	Propane in Air, 100 $\mu\text{mol/mol}$	02/12/2001	Renewal
1669b	Propane in Air, 500 $\mu\text{mol/mol}$	02/12/2001	Renewal
1671a	Carbon Dioxide in Air, 340 $\mu\text{mol/mol}$	01/14/1999	Renewal
1672a	Carbon Dioxide in Air, 350 $\mu\text{mol/mol}$	01/14/1999	Renewal
1677c	Carbon Monoxide in Nitrogen, 10 $\mu\text{mol/mol}$	08/07/2000	Renewal
1683b	NO/N ₂ , 50 $\mu\text{mol/mol}$	02/12/2001	Renewal
1684b	NO/N ₂ , 100 $\mu\text{mol/mol}$	02/15/2001	Renewal
1685b	Nitric Oxide in Nitrogen, 250 $\mu\text{mol/mol}$	01/10/2000	Renewal
1686b	Nitric Oxide in Nitrogen, 500 $\mu\text{mol/mol}$	01/10/2000	Renewal
2621a	Carbon Dioxide/Nitrogen, 1.5% mol/mol	10/02/1997	Renewal
2628a	Nitric Oxide in Nitrogen, 10 $\mu\text{mol/mol}$	03/01/2000	Renewal
2644a	Propane in Nitrogen, 250 $\mu\text{mol/mol}$	02/23/2001	Renewal
2646a	Propane in Nitrogen, 1000 $\mu\text{mol/mol}$	06/12/2000	Renewal
2647a	Propane in Nitrogen, 2500 $\mu\text{mol/mol}$	06/12/2000	Renewal
2648a	Propane in Nitrogen, 5000 $\mu\text{mol/mol}$	06/12/2000	Renewal
2736a	Propane in Nitrogen, 2000 $\mu\text{mol/mol}$	03/29/2000	Renewal
2740a	Carbon Monoxide In Nitrogen, 10% mol/mol	11/10/1999	Renewal

SRM#	Description	Date	New/Renewal
2741a	Carbon Monoxide in Nitrogen, 13% mol/mol	05/26/2000	Renewal
2294	Reformulated Gasoline (11 % MTBE)	03/12/1998	New
2295	Reformulated Gasoline (15 % MTBE)	03/12/1998	New
2296	Reformulated Gasoline (13 % ETBE)	03/12/1998	New
2297	Reformulated Gasoline (10 % ETOH)	03/12/1998	New
2718	Green (Raw) Petroleum Coke	07/28/1999	New
2719	Calcined Petroleum Coke	07/28/1999	New
2776	Sulfur in Furnace Coke (S - 0.825 % ^a)	03/31/1998	New
2782	Industrial Sludge (selected elements)	01/05/1999	New
2890	Water Saturated Octanol (39.24 mg/mL H ₂ O)	09/02/1998	New
1620c	Sulfur in Residual Fuel Oil (4.5 % ^a)	04/04/2000	Renewal
1632c	Trace Elements in Coal (bituminous)	01/23/2001	Renewal
1635	Trace Elements in Coal (subbituminous)	01/04/2001	New
2682b	Sulfur & Mercury in Coal, (subbituminous S - 0.49 % ^a)	02/20/2001	Renewal
2684b	Sulfur & Mercury in Coal, (S - 3.076 % ^a)	04/24/2001	Renewal
2685b	Sulfur & Mercury in Coal, (S - 4.730 % ^a)	02/20/2001	Renewal
2692b	Sulfur & Mercury in Coal, (S - 1.170 % ^a)	02/20/2001	Renewal
2717a	Sulfur in Residual Fuel Oil (3% ^a)	01/10/2000	Renewal
8506a	Moisture in Transformer Oil	02/02/2001	Renewal
870	Column Performance Test Mixture for LC	12/06/2000	New
877	Chiral Selectivity Test Mixtures for LC	12/06/2000	New
1944	NY/NJ Waterway Sediment	05/20/1999	New
1975	Diesel Particulate Extract (from Industrial Forklift)	11/17/2000	New
1650a	Diesel Particulate Matter (Selected PAHs)	11/17/2000	Renewal
2975	Diesel Particulate Matter (from Industrial Forklift)	11/17/2000	New
2976	Mussel Tissue-Trace Elements & Methylmercury	09/15/1998	New
2977	Mussel Tissue-Org. Contaminants & Trace Elements	04/18/2000	New
2978	Mussel Tissue-Org. Contaminants (Raritan Bay, NJ)	04/18/2000	New
1588a	Organics in Cod Liver Oil	07/15/1998	Renewal
1589a	PCBs,Pest,Diox/Furans/Human Serum	04/18/2000	Renewal
2586	Trace Elements in Soil (500 mg/kg Pb)	03/15/1999	New
2587	Trace Elements in Soil (3000 mg/kg Pb)	03/15/1999	New
8704	Buffalo River Sediment	03/10/2000	New

^a The values reported as a mass fraction

Physical Property Standard Reference Materials

New/Renewal **Physical Property Standard Reference Materials (SRMs)** for Ion Activity, Polymeric, Thermodynamic Properties, Optical Properties, Metrology, and X-Ray Spectrometry Measurements.

There are twenty-eight new and fifteen renewal SRMs certified for physical properties. Four renewals for ion activity include sodium tetraborate, potassium tetroxalate, sodium bicarbonate, sodium carbonate. One new and one renewal material for polymeric properties range from polystyrene, to ultra-hi molecular wt. polyethylene bar. There are three new and one renewal materials certified for thermodynamic properties that include tin and indium freezing point, gold vs. platinum thermocouple, and indium DSC calibration standards. Thirteen new optical standards are available ranging from liquid refractive index, potassium dichromate solution, six transmittance filters for optical density, and three IR transmittance SRMs. For metrology measurements there are ten new and six renewal materials ranging from coating thickness, arsenic implant, thin film depth profile, mode field diameter, wavelength absorption cells, polarization mode dispersion, optical fiber coating, and coplanar waveguide calibration. For x-ray spectrometry measurements, one new and two renewals include materials for liquid density, and line positioning.

SRM#	Description	Date	New/ Renewal
187d	Sodium Tetraborate (Borax), pH 9.182 @ 25°C	01/14/1999	Renewal
189b	Potassium Tetroxalate, pH 1.719 @ 25°C	09/01/2000	Renewal
191b	Sodium Bicarbonate, pH 10.015	05/14/1998	Renewal
192b	Sodium Carbonate, pH 10.015	05/14/1998	Renewal
706a	Polystyrene Pellets (molar mass)	11/10/1999	Renewal
8456	Ultra-Hi Molecular Wt. Polyethylene Bar	12/08/2000	New
741a	Tin Freezing Point	10/15/1998	Renewal
1745	Indium Freezing Point	03/27/1998	New
1749	Gold vs. Platinum Thermocouple	04/10/1998	New
2232	Indium DSC Calibration	03/15/1999	New
1922	Liquid Refractive Index-Mineral Oil	08/02/1999	New
1935	Potassium Dichromate Solution	03/12/2001	New
2035	Near IR Transmission Wavelength	03/09/1999	New
2046	Transmittance Filter w/Measured Optical Density (OD = 1)	07/22/1998	New
2047	Transmittance Filter w/Measured Optical Density (OD = 2)	07/22/1998	New
2048	Transmittance Filter w/Measured Optical Density (OD = 3)	07/22/1998	New
2049	Transmittance Filter w/Measured Optical Density (OD = 4)	07/22/1998	New
2050	Transmittance Filter w/Measured Optical Density (OD = 5)	07/22/1998	New
2051	Transmittance Filter w/Measured Optical Density (OD = 6)	07/22/1998	New

SRM#	Description	Date	New/Renewal
2053	IR Transmittance Standard (OD near 1.0)	08/29/2000	New
2054	IR Transmittance Standard (OD near 2.0)	08/29/2000	New
2055	IR Transmittance Standard (OD near 3.0)	08/29/2000	New
2056	IR Transmittance Standard (OD near 4.0)	08/29/2000	New
1358a	Cr & Cu Coating on Steel (80 μ m - 1000 μ m)	08/20/1999	Renewal
1359a	Cr & Cu Coating on Steel (48 μ m - 800 μ m)	08/20/1999	Renewal
1362b	Cr & Cu Coating on Steel (40 μ m - 205 μ m)	08/20/1999	Renewal
1363b	Cr & Cu Coating on Steel (255 μ m - 635 μ m)	08/20/1999	Renewal
1364b	Cr & Cu Coating on Steel (800 μ m - 1935 μ m)	08/20/1999	Renewal
2134	Arsenic Implant in Silicon	08/22/2000	New
2135c	Ni/Cr Thin Film Depth Profile	03/01/1999	Renewal
2513	Mode-Field Diameter of Single-Mode Fiber	07/19/1999	New
2517a	Wavelength Reference Absorption Cell	07/06/1998	New
2518	Polarization-Mode Dispersion Standard	03/13/2000	New
2519	Wavelength Absorption Cell	08/18/1998	New
2523	Optical Fiber Ferrule	09/08/1997	New
2553	Optical Fiber Coating Diameter n=1.504	03/15/1999	New
2554	Optical Fiber Coating Diameter n=1.515	03/15/1999	New
2555	Optical Fiber Coating Diameter n=1.535	03/15/1999	New
8130	Coplanar Waveguide Calibration	09/15/1998	New
211d	Toluene Liquid Density	03/08/2001	Renewal
640c	Si Powder Line Position & Line Shape for XRD	09/21/2000	Renewal
660a	LaB ₆ Powder Line Position & Line Shape for XRD	09/21/2000	Renewal
2214	Isooctane Liquid Density	03/08/2001	New

Health/Clinical/Food Standard Reference Materials

New/Renewal Health/Clinical/Food Standard Reference Materials (SRMs) for Health, Industrial Hygiene, Food Measurements.

There are twelve new and nineteen renewal materials available for health/clinical/food measurements. In the health area, there are four renewal and three new materials that range from uric acid, D-glucose, bovine serum albumin, toxic metals in blood, PCR-based DNA profiling, mitochondrial DNA sequencing, to ascorbic acid in human serum. There are eight new materials for industrial hygiene, and four renewal materials ranging from cocaine metabolite in urine, respirable alpha quartz, respirable cristobalite, lead paint films for XRF. The eight new materials include seven individual lead paint films, and trace elements in indoor dust. For foods and related products there are two renewals and one new SRM, meat homogenate. The renewals include typical diet, and oyster tissue. All new and renewal materials are listed below.

In addition, nutrition composition information has been added to a number of our existing reference materials. The certificates and reports of investigation have been revised to include this new information. The materials are SRM 1563 Cholesterol and Fat-Soluble Vitamins in Coconut Oil (Natural and Fortified), SRM 1974a Organics in Mussel Tissue (*Mytilus edulis*), SRM 1570a Trace Elements in Spinach Leaves, RM 8415 Whole Egg Powder, RM 8418 Wheat Gluten, RM 8432 Corn Starch, RM 8433 Corn Bran, RM 8435 Whole Milk Powder, and RM 8436 Durum Wheat Flour. The nutrition composition data that has been added are proximates (solids, fat, protein, etc.), individual fatty acids, calories, and total dietary fiber, as appropriate.

SRM#	Description	Date	New/ Renewal
913a	Uric Acid	01/05/01	Renewal
917b	D-Glucose (dextrose)	11/14/00	Renewal
927c	Bovine Serum Albumin (7% Soln)	05/12/99	Renewal
966	Toxic Metals in Blood	01/05/01	New
970	Ascorbic Acid in Human Serum	04/18/00	New
1508a	Cocaine Metabolite in Urine	03/15/99	Renewal
1546	Meat Homogenate	05/12/99	New
1548a	Typical Diet (Human)	02/19/98	Renewal
1566b	Oyster Tissue	01/25/01	Renewal
1878a	Respirable Alpha Quartz	09/15/99	Renewal
1879a	Respirable Cristobalite	09/15/99	Renewal
2391a	PCR-Based DNA Profiling	01/06/00	Renewal
2392	Mitochondrial DNA Sequencing	02/02/00	New
2570	Lead Paint Film (White/Blank) (<.001 mg/cm ²)	12/14/99	New
2571	Lead Paint Film (Yellow) (3.58 mg/cm ²)	12/14/99	New
2572	Lead Paint Film (Orange) (1.527 mg/cm ²)	12/14/99	New
2573	Lead Paint Film (Red) (1.040 mg/cm ²)	12/14/99	New

SRM#	Description	Date	New/Renewal
2574	Lead Paint Film (Gold) (0.714 mg/cm ²)	12/14/99	New
2575	Lead Paint Film (Green) (0.307 mg/cm ²)	12/14/99	New
2576	Lead Paint Film (Blue) (5.59 mg/cm ²)	12/09/99	New
2579a	Lead Paint Films for XRF (set of 2570 - 2575)	12/14/99	Renewal
2584	Trace Elements in Indoor Dust (1% Pb)	12/21/99	New
1563	Cholesterol and Fat-Soluble Vitamins in Coconut Oil	05/05/99	Renewal
1974a	Organics in Mussel Tissue (<i>Mytilus edulis</i>)	05/05/99	Renewal
1570a	Trace Elements in Spinach Leaves	06/01/01	Renewal
8415	Whole Egg Powder (Trace Elements & Proximates)	04/28/99	Renewal
8418	Wheat Gluten (Trace Elements & Proximates)	10/04/99	Renewal
8432	Corn Starch (Trace Elements & Proximates)	10/04/99	Renewal
8433	Corn Bran (Trace Elements & Proximates)	10/04/99	Renewal
8435	Whole Milk Powder (Trace Elements & Proximates)	04/29/99	Renewal
8436	Durum Wheat Flour (Trace Elements & Proximates)	10/04/99	Renewal

Engineering Standard Reference Materials

New/Renewal **Engineering Standard Reference Materials (SRMs)** for Sizing, Surface Finishing, Fire Research, and Performance of Engineering Materials.

There are thirteen new, and three renewal materials available that cover a large range of calibrations from specific surface area, particle counters, sieve calibration, hardness, smoke density, magnetic property measurement, toughness of ceramics, and secondary ferrite standards.

SRM#	Description	Date	New/ Renewal
1900	Silicon Nitride Powder-Specific Surface Area (Static 2.85)	03/27/1998	New
1899	Silicon Nitride Powder-Specific Surface Area (Static 10.52)	03/27/1998	New
1984	Thermal Spray Powder Particle Size (9 - 30 μm)	01/11/2001	New
1985	Thermal Spray Powder Particle Size (18 - 55 μm)	01/11/2001	New
8010	Sand for Sieve Analysis	08/13/1998	New
8631	Medium Test Dust (MTD)	04/23/1998	New
8632	Ultra Fine Test Dust (UFTD)	07/15/1998	New
2071b	Sinusoidal Roughness	10/20/2000	Renewal
2810	Rockwell C Scale Hardness - Low Range	06/18/1998	New
2811	Rockwell C Scale Hardness - Mid Range	06/18/1998	New
2812	Rockwell C Scale Hardness - High Range	06/18/1998	New
1006d	Smoke Density, Cellulose	09/16/1999	Renewal
762	Magnetic Moment - Ni Disk	07/12/2000	New
772a	Ni Sphere for Magnetic Moment	09/16/1999	Renewal
2100	Fracture Toughness of Ceramic	06/15/1999	New
8480	Ferrite in Austenite - Low Range	05/20/1999	New
8481	Ferrite in Austenite - High Range	05/20/1999	New

Radioactivity Standard Reference Materials

New/Renewal Radioactivity Standard Reference Materials (SRMs) for Radioactive Solutions, Alpha Particle Point Sources, Gamma Ray Point Sources, and Natural Matrix Materials for Calibrating Radioactivity Measuring Instruments.

There are three new and eleven renewal SRMs for calibrating radioactivity measuring instruments. There is one new natural matrix material, ashed bone, two renewal gamma ray point source materials, europium and barium, ten radioactive solutions, plutonium, americium, thorium, radium, strontium, hydrogen-3 and water.

SRM#	Description	Date	New/ Renewal
4218F	Europium-152 Point Source Radioactivity	04/06/1999	Renewal
4241C	Barium-133 Point Source Radioactivity	04/06/1999	Renewal
4323B	Plutonium-238 Radioactivity Solution	04/04/2000	Renewal
4330B	Plutonium-239 Radioactivity Solution	04/04/2000	Renewal
4332D	Americium-243 Radioactivity Solution	04/18/2001	Renewal
4334G	Plutonium-242 Radioactivity Solution	09/16/1999	Renewal
4342	Thorium-230 Radioactivity Solution	06/22/1999	New
4356	Ashed Bone Env. Radioactivity	04/04/2000	New
4361C	Hydrogen-3 Radioactivity Solution	07/28/1999	Renewal
4919H	Strontium-90 Radioactivity Solution	12/06/2000	Renewal
4926E	Hydrogen-3 Radioactivity Water	07/28/1999	Renewal
4927F	Hydrogen-3 Radioactivity Solution	07/28/1999	Renewal
4967	Radium-226 Radioactivity Solution	02/20/2001	Renewal
4969	Radium-226 Radioactivity Solution	11/18/1999	New



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